

CLAIMS

What is claimed is:

1. A leadscrew assembly comprising:
a leadscrew comprising
an elongated shaft having an outer lateral surface and a rotational axis, and
5 a leadscrew thread comprising a thread wire helically wrapped in spaced-apart turns upon the lateral surface and affixed to the elongated shaft; and
a hollow drive nut housing comprising
a nut bore having an unthreaded inner surface with the leadscrew being inserted through the nut bore, the nut bore being sized such that the
10 leadscrew may rotate therein about the rotational axis, and
a spring pin affixed to the drive nut housing and spanning across the nut bore to engage the leadscrew thread.
2. The assembly of claim 1, wherein the leadscrew further comprises a spacer wire having a size smaller than that of the thread wire and helically interwrapped about the elongated shaft with the thread wire.
3. The assembly of claim 1, wherein the elongated shaft is cylindrical.
4. The assembly of claim 1, wherein thread wire has a circular cross section.
5. The assembly of claim 1, wherein the spring pin has a first end and a second end, and wherein the first end and the second end are each affixed to the drive nut housing.
6. The assembly of claim 1,
wherein the spring pin has a first end, a central portion, and a second end, and

wherein the drive nut housing comprises a first spring pin retainer and an oppositely disposed second spring pin retainer, the first spring pin retainer having the first end of the spring pin affixed thereto and the second spring pin retainer having the second end of the spring pin affixed thereto, with the central portion of the spring pin spanning in an arc across an interior of the nut bore to engage the leadscrew thread.

7. The assembly of claim 6, wherein the first spring pin retainer and the second spring pin retainer each comprise openings in the drive nut housing.

8. The assembly of claim 1, wherein the drive nut housing has an access opening therethrough, through which the spring pin is accessible from an exterior of the drive nut housing and providing clearance for the spring pin.

9. The assembly of claim 1, further including a motor that rotationally drives the leadscrew.

10. The assembly of claim 1, further including a linear slide mechanism to which the drive nut housing is engaged.

11. The assembly of claim 10, further including an optical filter supported on the linear slide mechanism, the optical filter being movable by a rotation of the leadscrew.

12. A leadscrew assembly comprising:
a leadscrew comprising

a cylindrical shaft having an outer lateral surface and a cylindrical axis coincident with a rotational axis of the leadscrew,

a leadscrew thread comprising a thread wire helically wrapped in spaced-apart turns upon the lateral surface and affixed to the elongated shaft, the thread wire having a circular cross section, and

a spacer wire having a size smaller than that of the thread wire and

- 10 helically interwrapped about the elongated shaft with the thread wire to define a
spacing between the turns of the thread wire; and
a hollow drive nut housing comprising
a nut bore having an unthreaded inner surface with the leadscrew
being inserted through the nut bore, the nut bore being sized such that the
leadscrew may rotate therein about the rotational axis, and
15 a spring pin affixed to the drive nut housing and spanning across
the nut bore to engage the leadscrew thread,
wherein the spring pin has a first end, a central portion, and
a second end, and
wherein the drive nut housing has a first spring pin retainer
20 therein and an oppositely disposed second spring pin retainer therein, the first
spring pin retainer receiving the first end of the spring pin therein and the second
spring pin retainer receiving the second end of the spring pin therein, with the
central portion of the spring pin spanning in an arc across an interior of the nut
bore to engage the leadscrew thread.

13. The assembly of claim 12, wherein the first spring pin retainer and
the second spring pin retainer each comprise openings in the drive nut housing.

14. The assembly of claim 12, wherein the drive nut housing has an
access opening therethrough, through which the spring pin is accessible from an
exterior of the drive nut housing and providing clearance for the spring pin.

15. The assembly of claim 12, further including
a motor that rotationally drives the leadscrew about the rotational axis.

16. The assembly of claim 12, further including
a linear slide mechanism to which the drive nut housing is engaged.

17. The assembly of claim 16, further including
an optical filter supported on the linear slide mechanism, the optical filter

being movable by a rotation of the leadscrew.

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